Alberta Advisory Council on Women's Issues

ALBERTA ADVISORY COUNCIL
ON WOMEN'S ISSUES

DISCUSSION PAPER ON

NEW REPRODUCTIVE TECHNOLOGIES

MEDICAL, LEGAL AND ETHICAL IMPLICATIONS

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EXECUTIVE SUMMARY - NRTS, NEW REPRODUCTIVE TECHNOLOGIES

Human reproduction is in a state of profound transformation. With the use and abuse of fertility drugs, test-tube babies and surrogate motherhood, we are daily learning more and more about NRTs, or New Reproductive Technologies.

The purpose of this discussion paper on NRTs, by the Alberta Advisory Council on Women's Issues, is to encourage careful analysis, study, discussion and debate on the issues and ramifications involved.

Developments are escalating rapidly as man, instead of nature, attempts to create life and create processes to do what we would not have considered remotely possible a century ago. It is for this reason that we must play catch up and provide legislation to safeguard future children, their parent or parents and the whole family structure.

With the advent of new technologies, maternity is often viewed as a series of distinctive functions which may result in five different "parents" - the sperm donor, the egg donor, the gestational (uterine) mother and the two parents who will raise the child.

Will medicine seek to control these functions in order to counter shortcomings of the "human machine" and achieve the best possible results at the lowest cost?

Will underprivileged women be recruited and exploited in larger numbers for this type of function? Manufactured motherhood could result as some American promoters have already considered establishment of international networks to approach women from poorer under-developed countries. What happens to maternal power and the mother-child bond? Many legal, social, ethical, religious and moral issues will have to be considered.

In Alberta we are most familiar with In Vitro Fertilization and Artificial Insemination. Both are used to aid otherwise infertile couples who are unable to conceive a child because one or both of the partners has a genetic or congenital problem.

Statistics show us that 15 percent of couples within the reproductive age group have fertility problems (lower in Alberta at seven to eight percent), and a couple that fails to achieve pregnancy after trying for 12 months is considered infertile. In Europe couples are given two years to try and conceive before the same diagnosis is made.

There are currently over 200 In Vitro Clinics in the United States and Canada with 12 in our country. We have two centres in Alberta working with infertility. The Foothills Hospital Centre in Calgary handles the largest number of patients and is the only one equipped to handle In Vitros.

The University of Alberta Hospital Centre in Edmonton looks after the additional 1000 patients a year from Alberta, the Northwest Territories, Northern Saskatchewan and Northern British Columbia.

Part of the process of Artificial Insemination and In Vitro Fertilization involves freezing, transplanting and storing embryos for use and research. These sperm, embryos and ova are observed, isolated, separated, selected, modified and stimulated. But to what and whose benefit, and who owns an embryo abandoned by parents, or one whose parents die?

The unknown effects of long-term freezing and the difficulty of resolving the related moral and legal issues also underscores the need to set a limit as to the time embryos be kept frozen.

It was only one decade ago that the first successful test-tube baby came into the world. The case of Louise Brown born in England in 1978 is well documented. Today, there are almost 2000 children who have been conceived the same way.

Married couples who can afford treatment are the ones with access. We currently do not have control mechanisms for In Vitro Fertilization in this province. Costs are not covered by Alberta Health Care, and at this time, no legislation governs the procedures.

Decisions will have to be made about the implications of prenatal diagnostic techniques such as amniocentisis, ultrasound and CVS. Originally developed for problem pregnancies, today they are widely used for all pregnant women. Should we be concerned about the risk or harm to both woman and fetus - and are women being adequately informed about such risks?

Prenatal examinations are currently used in cases where a mother is over 35 years of age; a women has had repeated miscarriages; a parent suffers from hereditary diseases and when a first child was stillborn or was mentally or physically handicapped.

When calculating the cost of prenatal diagnosis, economic arguments could carry a lot of weight with governments. Elimination of a genetic anomaly, or more likely, abortion of the abnormal fetus at the state of prenatal diagnosis could save society the cost of caring for physically and mentally handicapped persons.

As medical science continues to learn how to modify the human being, will children increasingly be perceived as a consumer product whose acquisition can be planned and programmed to suit parental expectation as to sex, appearance and genetic type?

At this time, there is only one sex selection clinic in Canada in Toronto. Opened in September of 1987, the clinic has not yet produced a child through "sperm splitting" a new technique now available to control the sex of offspring, although several women are currently pregnant as a result of this technique.

Elsewhere, however, at sex selection clinics utilizing the Ericsson method of either Y or X-rich sperm artificial insemination, 75 to 80 percent male infants resulted for 300 couples. Use of the female selection method also produced 75 to 80 percent female infants for 30 couples.

Clinics are being swamped with requests for boys. For some cultures boys are a definite preference. The danger is that the tailored to measure baby is just around the corner and our system of values well may change unless we take a long hard thorough look at NRTs and guard against the endangering of the family and separating of procreation and conjugal aspects of marriage.

Many philosophers, feminists, journalists and technologists are

concerned about the threats to women's survival. In India, systematic abortion of female fetuses is being practiced on a large scale. It has already had an impact on the demographic balance, an effect some women authors define as "gynocide."

Research also shows several countries have already adopted laws on abortion, sterilization and contraception. Penalties are imposed and incentives used to influence population growth. Countries could employ similar methods to "improve the genetic stock of the nation."

Surrogacy is illegal in Canada at this time. Such arrangements involve preconception contracts between a woman and a client/couple who arrange to "pay" for the woman's gestational services. These contracts are often arranged by agents (ie: lawyers or surrogate placement and referral services) who often charge high fees for the transaction. Concerns that women will end up being little more than reproductive machines must be considered along with such issues as maternal autonomy, the potential rights of the fetus and the degree to which contracts are made.

The procedures outlined here and in the attached pages are onl· the tip of the iceberg. Other "potential" reproductive technologies are currently being researched such as: ectogenesis

(artifical wombs), cloning (genetic reproduction of carbon copies), parthenogenesis (asexual reproduction, the duplication of the female egg without fertilization by sperm), banks of substitute material, human gestation of animals and facilitation of male gestation.

Law should flow from community ethics. Discussion and debate to safeguard motherhood and preserve society with free choices within the limits of human nature and social consciences must take place.

We are fast approaching the 21st century. Technology has leapt forward more rapidly in the past fifty years than in all the time before. In the process and with the information explosion it is difficult to keep up with every new development in every new field. It is the intention of the Alberta Advisory Council on Women's Issues, to bring your attention to an area that we are still learning about, a subject that concerns the health, happiness and welfare of people everywhere. We urge you to become informed and involved. We invite your comments, research and opinions. NRTs, New Reproductive Technologies- where do you stand? Perhaps you'll have a better idea after reading the next few pages.

2. INTRODUCTION

We have all heard stories of medical miracles that have transformed infertile patients into parents. In recent years terms such as Artificial Insemination and In Vitro Fertilization have stepped out of the headlines and become an aspect of daily life for thousands of infertile couples. For them, the words offer hope, for many others, fear and caution.

Concerns are now being raised about the impact of these technologies on society. The potential for the abuse and misuse of such procedures is great.

The general public needs more knowledge about these techniques and their ramifications. What are they? How are they done? Who receives treatment? What is the success rate?

Albertans need to know what services are currently available to them so they can actively participate in the discussion of whether or not limitations should be placed on these techniques.

The ethical, legal and medical questions regarding these procedures require careful and thoughtful responses. As with all discoveries we must guard against their dangers while permitting their beneficial aspects to be developed. We are on new, untravelled territory dealing with the very heart of our

existence : the creation of new life. The larger ethical question - "Do we have the right to tamper with life's natural process?", has been debated since the dawn of medical science. Medical intervention has long been used to prolong life; these new technologies permit us to create it where it might not otherwise exist. When used to make one infertile couple proud parents of a loved child, medical science is a marvel. When unchecked and abused, medical science can become a horror.

There is a concern that some of these technologies could be applied to fertile women; that some women could be used as little more than reproductive machines. Surrogacy poses this problem as does the harvesting the eggs of one woman to be implanted in another woman during the In Vitro Fertilization procedure.

As time progresses, doctors may be able to bring a fetus to viability using an "artificial womb". Do we want such a creation? If we reduce the creation of new life to nothing more than a cold, scientific process, will our perception of the value of life change?

The field of New Reproductive Technologies is expanding rapidly and we, as a society, must expand our knowledge and understanding of the complex issues surrounding them.

3. WHAT IS INFERTILITY?

In simple terms, infertility is the inability to conceive a child. In order to be diagnosed as "infertile", couples must attempt to conceive for one year before diagnostic testing is initiated. This one year guideline is used for older couples. those in their mid to late thirties; younger couples are often advised to try to conceive for a longer period of time before using medical procedures. (Note: In Europe, however, the time frame is two years). Infertility can take many forms, and can originate as a problem with the male, the female, or with both partners.

It is estimated that there is a seven to eight percent general rate of infertility in Alberta at present. This represents only those individuals who are genetically or congenitally unable to conceive children. The rate is higher when those who are voluntarily sterile (eg: vasectomies, tubal ligations, etc.) and those whose lifestyles have negatively affected their fertility (eg: sexually transmitted diseases or STDs) are factored in. We know that physiologically rooted infertility affects many people and requires examination. Approximately 40 percent of all infertility problems originate with men. These include:

-diseases of a genetic nature

-testicular diseases

-problems with endocrine gland functioning

-variocele (dilation of spermatic cord vessels that impede production and mobility of sperm)

-impotence or ejaculation problems

-retrograde ejaculation

-absence or blockage of vas deferens caused by STD

The remaining 60 percent of infertility problems can be traced to women.

-ovulatory factors

-tubal factors (obstruction, damage from STD, endometriosis, mucus, etc.)

-uterine factors (anomalies, etc.)

-cervical factors (inflammation, rejection of spermatozoa by cervical mucus, etc.)

(Conseil du Statut de la Femme. Dilemnas: When Technology Transforms Motherhood. Page 9. Quebec 1987).

Male infertility is usually addressed with artificial insemination treatments. This method is used in cases where the husband's sperm exhibits one or a number of the following characteristics:

-insufficient sperm (low count)

-lack of required motility of sperm

-a high malformation count of sperm

-poor volume of sperm

-anatomical or congenital anomalies

-impotency

More than fifty percent of men who have been diagnosed as infertile cannot be medicaliy treated. Surgery is used to correct variocele or to unblock the vas deferens. The estimated success rate in treating variocele is fifty percent.

Female problems are most frequently treated with hormonal regimens or surgery. Hormonal treatments are extremely effective in combatting certain causes of sterility, particularly anovulation. The hormonal treatments are designed to stimulate ovulation, and can result in multiple births.

Surgery can also be performed on the fallopian tubes if they have been affected by ligation, inflammation, or endometriosis. Success rates for these procedures range from ten to ninety percent depending on the particular case and techniques employed. Malformations of the uterus can also be corrected surgically.

Of those individuals who have been diagnosed as infertile, fertility specialists have been able to estimate the causes and prevalence of factors contributing to their sterility. Based on patient diagnosis in Alberta, specialists indicate the

breakdown as follows:

-40% "male" problems (eg:low sperm count)

-30% tubal problems (frequently caused by untreated STD)

-15% ovulatory problems

-15% "unexplained"

- 2% cervical problems

Dr. David Cumming, associate professor , Department of Obstetrics and Gynecology at the University of Alberta, and colleagues state that there is a relatively small range of possible causes of sterility. "Inability to conceive can be traced to a fairly small number of reproductive functions. If a woman does not ovulate, she cannot conceive...If a man has a very low sperm count, he most likely will not impregnate his partner." Physicians suggest that the majority of causes are potentially treatable due to advances in medicine.

The above "problems" are often related, or found together in an infertile couple. For example, a woman may experience both tubal and ovulatory problems. This is particularly the case with problems that have been caused by the untreated presence of STD. Sexually transmitted diseases have increased the incidence of infertility. While some fertility specialists suggest that the STD related causes of infertility may decline in coming years (with increased usage of condoms, etc.) STD control specialists contend that this will most likely not occur.

4. THE HEARTBREAK OF INFERTILITY: A PROFILE OF PATIENTS

A Case Study

Carla and Bill are a couple living in Edmonton. They are 33 and 36 years old respectively, and have been married for eight years. Both are professionals and have worked in their fields for a number of years. Financially stable, they describe their marriage as solid and loving.

They were diagnosed as infertile three years ago. Since that time, many changes have taken place in their lives, and the couple has faced many difficult moments. Carla has quit a job that she enjoyed a great deal in order to be prepared and receptive to treatments. They have lost a number of friends, and describe many relationships with family and friends as "strained."

Carla and Bill fall into the fifteen percent of diagnosed cases of infertility categorized as "unexplained." According to Bill, "Not knowing why is the hardest part to come to grips with." Carla shares this opinion and says, "Other couples know what they're dealing with, and the doctors treat them for those causes. With us, it's just hit and miss, and hopefully something will work."

The couple have undergone a battery of diagnostic tests over the past three years. None of the tests offered conclusive evidence as to the cause of the infertility. Carla has been artificially inseminated using her husband's sperm as well as by donor. She has participated in hormonal regimens, and reports that last year she experienced a "pseudo menopause" brought on by her hormone treatments.

Despite the numerous emotional (marital stress, strained relationships, the anguish of failed treatments) and financial(loss of an income, high cost of treatments) difficulties of the treatment, the couple has not entirely given up hope. While they recognize all of the drawbacks to continued treatment, they feel that since they have come this far, they might as well keep going with it. They have great faith in the developments of medical science. Says Bill, "It's only a matter of time until they come through."

Other couples experience similar anguish and disappointment in the pursuit of treatment for their infertility. While a number of these couples like Carla and Bill who are caught on the "treadmill" of failed attempts. The circumstances are somewhat different in each case, but the bottom-line remains the same -- they want children, but cannot have them.

This couple is a typical example of those patients currently undergoing treatment for infertility. They share common

characteristics such as behaviour, age and socio-economic-status (S-E-S). Patients are generally in their early to middle thirties, middle to upper income brackets, both partners have usually worked for a number of years, and both are generally well educated (eg: at least some post-secondary or technical background). Many have postponed child bearing in order to accommodate career plans, lifestyle, or for financial necessity. While lower S-E-S individuals frequently pursue treatment for infertility, the high costs of many of the treatments can be a barrier.

Many of these couples, once diagnosed as infertile, begin a "tread-mill-like journey," toward having a child. Fertility specialists describe these individuals as being "incredibly compliant" and quite willing to "undergo what are often extremely painful procedures."

As they begin the treatment schedules, however, many have second thoughts about how much they are willing to endure. The routines associated with their efforts to conceive are often tedious and frequently uncomfortable.

During the one year period of "failed" attempts to conceive prior to diagnosis, much of the enjoyment and spontaneity associated with lovemaking will have diminished. This appears to compound the stress on an already taxed marriage. As one infertile wife said, "Sex became part of a routine. We only had

sex when the time was scheduled as 'right', and never any other time. It wasn't something to look forward to at all -- it was just another pressure."

It is often difficult for these couples to come to terms with the clinical, methodical approach of the treatments. Sex loses much of its warmth, and at a time when these couples need it most, much of the intimacy is lost. The "routine" component is highlighted by such necessary procedures as record keeping, temperature taking, and other procedures that patients must follow.

According to infertile couples interviewed by Advisory Council research staff, the period following initial diagnosis of infertility and during treatment is the most difficult time emotionally and psychologically. They must decide if the treatment is really what they want; if they wish to continue; and just how far they are willing to go with the treatments. They must also face the possibility that none of the available methods will be successful.

As the couples grapple with their conditions and their treatments, there are a number of common themes that surface. Among the patterns of behaviour that they cite as common are:

-excessive babysitting for other couples (often pursuing daycare or other child care work)

-setting up nurseries (without knowing for certain that there will be a child to fill it)

-purchasing clothing, toys, etc. for children

-reading parenting books and magazines

-viewing everything as being "family" (eg: television programs, seeing families constantly, literature...)

-many women quit working outside of the home in order to prepare for the baby, as well as to prepare for the treatments)

-strained relationships with family and friends

-loss of ability to discuss most topics not related to either current or upcoming treatments

-pre-occupation with "babies" and pregnancy

-hysterical pregnancies, and subsequent deep depression

Many women acknowledge that treatments that would once have been dismissed as "old wives tales" become viable options when conventional treatment is failing. One infertile woman who had undergone numerous treatments prior to adopting mentioned that

she had been told by her church Minister that a local reflexologist had aided in another couple's conception. She says that her church Minister encouraged her to pursue this as a possibility.

The couples indicate that they receive a great deal of advice from well-intentioned family and friends. These suggestions range from "standing on your head for at least one hour each day." to high carbohydrate diets and abnormal sleeping patterns. Additional pressure on the couples comes from the way they are treated by those closest to them. They say that they are always the last to be informed when someone they know becomes pregnant. They feel hurt when this happens, but acknowledge that their families and friends are simply attempting to shield them from pain. At the same time, they resent the assumption that they are unable to deal with this kind of information, and say they would prefer to be told.

Stress on the marriage itself can be extreme. The result of a number of factors; it can be particularly acute if only one partner is infertile. Families can also cause problems. The relatives of one spouse may blame the other spouse helping to create an intolerable situation. As mentioned, sex frequently becomes a stress-point in the marriage. Each failed attempt to conceive adds to the pressure, and lovemaking becomes a chore or a burden.

Couples say they often feel pressure from their doctors to continue pursuing treatment. According to a number of patients, "the doctors push the procedures...They don't mean any harm....They're just trying everything that they can, and to do it, they need the patients."

5. TREATMENTS AND TECHNOLOGIES

a. Prenatal Diagnostic Techniques:

This group of technologies are used to determine a variety of genetic characteristics, fetal abnormalities, and sometimes the gender of the fetus. At this time, the most common of these techniques are ultrasound, amniocentesis, and chorionic villi sampling (CVS).

Initially developed for use in problem pregnancies these techniques have become commonplace even in the most routine pregnancies, despite the fact that they carry some risk of harm to both mother and fetus.

Ultrasound

High frequency sound waves are used to produce an image on a video screen of various fetal sizes and position. This procedure is widely used by obstetricians to examine fetal development, and it is particularly useful in monitoring high-risk

pregnancies. The ultrasound can detect various anatomical malformations (organs, limbs, etc.).

Amniocentesis

This is a prenatal diagnostic technique that may be used to detect the gender of the fetus and any chromosomal abnormalities (mainly Down's Syndrome). A needle is inserted into the abdomen of the pregnant woman and a sample of the amniotic fluid is extracted. This technique is practised on women over 35, as risk of chromosomal abnormalities increases as the mother ages. One drawback of amniocentesis is that it cannot be performed until the second trimester of pregnancy.

Chorionic Villi Sampling (CVS)

CVS is also used to detect any chromosomal abnormalities. A fairly recent development, it examines cells of fetal origin removed from the woman's uterus. While the procedure is still somewhat experimental, CVS may be performed in the first trimester of pregnancy. If perfected, (and approved by the government), this procedure could provide an alternative to the four month waiting period required for amniocentesis.

Prenatal diagnostic tests can help to determine the health of the human fetus. Will we use this ability to rid ourselves of

numan beings who are not "perfect"? Will we eventually decide (or be told) to abort all fetuses who suffer from a genetic defect? How do we decide what is an 'acceptable' handicap? Who decides? Should we decide? If this technology is abused, the results could be disastrous. It could be used to weed out 'undesirables' of society by people in power. They could eradicate other races or limit their numbers; the number of women born could be regulated leaving women in a decidedly subservient position.

The doctors interviewed by the Council research staff did not believe such concerns were reasonable. However, women's groups state that if regulations are not adopted now, the potential for future abuse of such technology is great.

In response to accusations that women are raising far-fetched , futuristic fantasies feminists such as Gena Corea, have taken pains to outline previous attempts by governments and lawmakers to create a "perfect" society. (Adolf Hitler's policies regarding the propagation of the human race encompasses one end of the scale; laws forcing the sterilization of mentally retarded individuals encompasses the other).

b. In Vitro Fertilization

It has been ten years since the birth of Louise Brown, the world's first "test-tube" baby. The procedure has become more

successful and accessible in this time. The process involves the extraction of human ova from a woman's body which is then fertilized in a laboratory petri dish. The fertilized ova are generally re-implanted into the same woman's uterus, but could be implanted into another woman, used for research or discarded. In the future (when technology allows) it could also be placed in an "artificial womb".

One distinctly medical concern about this method is the impact of superovulation on women. In some cases this form of treatment has led to early menopause. In Canada, Clomid is often used to aid in the stimulation of ovaries. Among the known side-effects of Clomid are: disturbances of the intestines and bladder, eye and liver problems, and the enlargement of the ovaries among others. The long-term effects of such treatments are unknown. Follow-ups of previously treated women and their offspring are NOT presently required.

Dr. Tony Pattinson of the Endocrine Infertility Clinic in Calgary, said that while there is obviously some concern, the patients are informed of the possible side-effects of these drugs before they undergo treatment and efforts are being made to eliminate or lessen the side-effects of superovulation. Dr. Cumming also noted that <u>most</u> of these side effects are temporary and they are all reversible.

c. Embryo Transfer

Although not currently used in Canada, this technology is used in other countries. A fertilized egg from one woman is surgically removed and placed in a second woman's uterus. Embryo replacement is a related technique, and involves the re-implantation of a woman's own fertilized egg into her womb during in vitro fertilization. Fertility drugs and methods such as Superovulation are frequently employed in order to ensure that there is a sufficient supply of eggs if transfer is being undertaken.

The ethical considerations and legal implications of this technique are numerous. What should physicians do with embryos not used or 'left-over' after IVF treatment? Should they be frozen and kept for future use, used for research (to further IVF efficiency) or destroyed? If they decide to freeze the embryos, who owns them? Do they have legal status? How long should they be stored?

At an American conference held in 1982, a number of professionals met to discuss the ethical and legal questions surrounding NRTs. On the issue of the legal status of the embryo, the following comment was made:

"The Supreme Court decision of 1973 [Roe vs. Wade] defines our current legal position with respect to abortion. This ruling clearly provides that protection [of a fetus] does NOT apply to the first trimester of a pregnancy under any circumstance.

Many recent court cases have drawn attention to the potential legal conflict between the state's protection of the fetal rights and interests and the physical integrity and autonomy of the gestational mother. The recent "Baby R" case in B.C. illustrates some of the possible difficulties involved in the resolution of these rights. The gestational mother refused to allow the attending physician to perform a caesarean section. The physician was able to have the unborn fetus classified as a "ward of the state", and was able to supercede the wishes of the mother. It was a clear demonstration of the state limiting the rights of the mother to protect the fetus. The implications of legal recognition of the fetus as a "ward of the state" are extensive.

Embryo's are usually frozen at the two to six cell stage. What are the implications on the abortion debate, if the courts in Canada decide that an embryo has the status of a human being and is entitled to rights and freedoms accorded other human beings. If such a ruling were made, would we then be obliged to bring all "left-over" embryos to life? If we discard them, are we committing murder?

The dilemnas presented by the storage of embryos are extremely complex. Not only is storage time an issue, but the activation of the embryos at a later date presents problems. For example, if they are activated and live, who are their legal guardians? Can research be performed on them? Who should decide to activate the embryos initially?

Calgary's Dr. Pattinson sees enormous potential arising from the freezing of unused embryos. If, for instance, 10 embryos were harvested doctors could implant two into the patient and freeze the remaining eight. If, for whatever reason the first embryos did not produce a child, the doctors could implant two more a month for the next four months. This would decrease one of the painful aspects of the procedure for women (the extraction of eggs from the womb). Recent studies in France indicate the success rate has improved as much as 40 percent utilizing this method. Frozen embryos could also be kept in the event that the woman miscarried or wished to have another child. Although it is still in its theoretical stage in Canada, one option may be what Dr. Pattinson calls "embryo adoption." In this instance, the original parents of the embryo would permit the remaining embryo(s) to be used by another infertile couple to assist them in having a child of their own.

Dr. Cumming, of the University of Alberta, believes the moral

and ethical dilemnas regarding frozen embryos could be avoided by perfecting the technique of freezing the eggs instead.

Addressing existing concerns, he says that if the patients define life as sperm and egg, they could donate the embryos to another couple instead of destroying them.

Dr. Cumming is not in favour of any legislation in this area. He believes, however, that the medical community should establish guidelines and that, ultimately, the patient should have the right to decide what is going to be done with the embryo(s).

d. Surrogacy

Surrogate arrangements generally involve preconception contracts between a woman and a client/couple who arrange to "pay" for the woman's gestational services.This form of surrogacy is illegal in Canada at this time.

The surrogate is most commonly artificially inseminated with the husband's sperm, and will generally agree to bear the couple's child for a predetermined amount of money. These contracts are often arranged by agents (ie: lawyers or surrogate placement and referral services) who often charge high fees for arranging the deal. As surrogacy arrangements of all kinds are illegal in Canada, these agencies are not formally registered in our

country, nor are they licensed to perform services in any capacity.

The "Baby M" case, and other contested surrogacy arrangements have pushed this "alternative" to traditional childbirth into the limelight in recent years. The ensuing clamour has forced legal and ethical consideration of such issues as maternal autonomy, the potential that the rights of the fetus may supercede the rights of the gestational mother; the degree to which these contracts are, and should be binding, along with many other concerns.

Should signing a preconception contract preclude any legal rights of the biological mother if she elects to keep the child, or wishes to claim maternity? In the most recent court decision regarding "Baby M", a New Jersey court granted the biological mother limited visiting privileges. Concerned groups also perceive the potential violation of civil rights in the "power" of the contractual couple to dictate the behaviour and lifestyle of the surrogate while carrying the fetus.

Another area of contention is whether or not this form of contract can be valid and/or binding. If it is considered binding, can the child be regarded as a "commodity" to be bought and sold? Does this not violate the basic principles of our society? The dilemna is further complicated by the fact that

the child is already jointly "owned" by both biological parents; is it possible to buy what is already yours? Is it legal to sell it?

There are numerous contract laws dealing with the issue of defective products; if the child conceived is deemed "defective" by the biological father and "adopting" mother is the contract then null and void? Does the father have to take the child? If not, does the biological mother have a responsibility to keep it? If she doesn't want it, does it become a ward of the state? Is either parent legally and financially responsible for the child?

Feminists argue that the crucial issue in the surrogate debate is the potential exploitation of impoverished and/or minority women resulting in the selling of their own children. It is possible that surrogacy could eventually be used by some women as a means of avoiding the inconvenience of pregnancy rather than because they are physically incapable of bearing a child. Do we, as a society, want to risk the creation of a "surrogate" class? Feminists stress that "defining and protecting women on the basis of their reproductive function has been the basis of inequality to date." Because of this, they feel that any legalized expansion of surrogacy would be detrimental to the status and rights of women.

e. Sex Selection

These procedures attempt to control the sex of offspring. The only effective preconception method at this point involves "sperm splitting" wherein sperm bearing male chromosomes, Y, are separated from those bearing female chromosomes, X, Conception takes place with the artificial insemination of either Y- or X-rich sperm, depending on the gender desired.

At this time there is only one sex selection clinic in Canada. Dr. Alan Abramovitch, a male infertility specialist in Toronto, provides this service in addition to treatments for infertility. Opened in September of 1987, the clinic has not yet produced a child with this procedure although several women are currently pregnant as a result of this technique.

In literature provided by the clinic, Dr. Abramovitch details the success rate of this method. "Statistics have so far shown that use of the Ericsson method produced 75 to 80 percent male infants in more than 300 couples. Use of the female selection method also produced 75 to 80 percent female infants in 30 couples."

Dr. Abramovitch's literature package also informs his potential patients of their chances of conception using this method. "It must be understood that the chances of a successful pregnancy

with this technique, as with natural means, is only 20 percent in any one month, and the chance of pregnancy decreases as the age of the woman increases."

Charges for the procedure are as follows:

First cycle, including initial consultation, semen analysis, seminal separation and isolation process including materials and artificial insemination: $600.00

Each subsequent cycle: $500.00
(Note: This treatment is not covered by any health care system in Canada)

When contacted by the Alberta Advisory Council on Women's Issues, Dr. Abramovitch was quite open in his response to the ethical concerns of such treatment. Asked about the possibility that his patients may abort the fetus if it is the "wrong" gender, (easily determined by amniocentesis), he replied that his patients must agree to carry the fetus to full term regardless of gender. If they do not agree, he says he will refuse to do the procedure.

Dr. Abramovitch also refuses to treat childless couples unless they can convince him that they only intend to have one child in their family. He believes the technique should be utilized to

'complete' families rather than to 'create' them.

While this doctor has taken some steps to avoid the controversy and potential abuse of this procedure, there is no legal guarantee that other doctors will establish similar guidelines.

Dr. Pattinson and Dr. Cumming each expressed concern over the sex selection service. Both men worried that a fetus may be aborted because it is the "wrong" gender. Despite his concern, however, Dr. Pattinson does not see the need for selective legislation in this area.

Dr. Cumming said that, with one exception, sex selection "addresses a social need rather than a medical one." When asked about the potential for a population imbalance in the future, he maintains that there are some indications that this is a valid concern but felt that, "most parents aren't that concerned with the sex of their child. Unless they have large families where all of the children are the same sex, the likelihood of parents choosing to utilize the service is remote." He further believes that if a clinic were to open in Alberta,"it would go bankrupt."

Dr. Cumming believes there is one important medical aspect of this process. It could be used when parents could pass on an X or Y link recessive gene which could cause genetic defects or the premature death of the resultant child. The parents could

try to ensure that their child would be the gender unaffected by the recessive gene.

How will this process impact our society? Can we ever rationalize the rejection of offspring solely on the basis of gender? The impact of this procedure on future generations could be enormous if widely implemented. There are indications that parents, globally, prefer male offspring. With this in mind can we justify allowing these clinics to be established in Canada? In Alberta?

f. Brave New World Technologies

When we consider that it has been only one decade since the first successful test-tube baby was born, it becomes clear that reproductive technologies are advancing at an incredible pace. It is not outlandish to envision the development of such technologies as artificial wombs, and the facilitation of successful male gestation and delivery of children.
Among the "potential" reproductive technologies that are currently being researched are: parthenogenesis, cloning and ectogenesis.

Parthenogenesis

A form of asexual reproduction it involves the duplication of the female egg without fertilization by sperm. It results in all-female offspring. The process has been achieved in laboratory experiments with some plant and animal species, but not successfully with humans to date. The process is also known as "virgin birth."

Cloning

Cloning is similar to parthogenesis. A form of asexual reproduction which produces a genetic "carbon copy" of the original organism, it has been synthetically achieved in some plant and animal species, and often occurs naturally among many species of plants and animals.

Ectogenesis

This process refers to the possibility of bringing a human fetus to term by using life support systems or "artificial wombs." Technological advancements in areas such as sustaining premature infants, and sophisticated life support systems already in place indicate the idea is not as 'far-fetched' as it may seem. Ectogenesis literally means "produced outside" (in this case, outside of a human womb).

6. TREATMENTS FOR INFERTILITY IN ALBERTA

A Provincial Overview

There are only two infertility clinics operating in Alberta. While both clinics are extremely busy (treating several hundred patients each year), the infertility clinic in Calgary has been able to provide IVF, as well as more "traditional" treatments such as artificial insemination to patients.

Prior to September of 1987, the Calgary clinic worked only with patients from Southern Alberta, although referrals were taken in certain cases. The Edmonton clinic treats individuals north of Red Deer, and in the Northwest Territories, as well as parts of Northern British Columbia and Saskatchewan. According to staff at both hospitals, "demand exists for clinics in both cities." It is further felt that there should be at least two accessible clinics operating in Alberta, and that each of these clinics should have the resources to provide a wide range of treatments for infertile patients.

a. Endocrine Infertility Clinic and IVF Program - University of Calgary/Foothills Hospital

The Calgary clinic is headed by Dr. Tony Pattinson (Acting

Director). The clinic performs a number of procedures ranging from initial examinations determining causes of sterility to providing in vitro fertilization treatment for eligible patients.

Diagnosis of Infertility

The Calgary clinic also conducts numerous "workups" (tests aimed at determining the causes and incidence of infertility) and other diagnostic procedures on patients. These tests include:

-semen analysis
-ovulation predictor tests
-post-coital testing
-Hysterosalpingogram
-Endometrial Biopsy
-Laparoscopy
-Tuboplasty
-tests for cervical hostility (inability of sperm to penetrate cervical mucus)
tests for cervical Stenosis (narrowing of the cervix)
-examination of possible immunological factors
-congenital abnormalities

As names on a page, these tests take on a benign, almost banal, quality. This image is deceptive. Some of these tests are

extremely painful; almost every one is conducted on the woman.

Artificial Insemination

The Calgary Clinic has a six to twelve month waiting list for all artificial insemination procedures. The clinic has performed AI since the mid 70's, and treats approximately 75 individuals per year.

Artificial insemination is not covered by Alberta Health Care at this time. Patients undergoing AI must pay $220 per cycle for treatment. This covers the costs incurred in the collection and storage of sperm samples.

In recent years, the emergence of the AIDS virus has prompted fertility specialists to opt for the use of frozen sperm only. This process allows the clinics to "screen" samples for AIDS, and therefore alleviates fear of infection from anonymous donors. The Calgary Clinic has been using frozen sperm since 1985 in order to facilitate adequate and on-going screening of donors to reduce the risk of transmitted disease.

The clinic performs AI using donor sperm (Therapeutic Donor Insemination or TDI) or the husband's sperm (AIH), and has performed intra uterine insemination for the past twelve months. The success rate for TDI is approximately 60-70 percent; the

rate for AIH are much lower, only 20 percent. With only a 10 percent success rate the intra uterine insemination procedure is viewed as a "last ditch attempt" and patients are generally long-term infertile couples with who have tried other methods and failed.

In Vitro Fertilization

The current waiting list for IVF treatment in Calgary is between six to twelve months. The clinic has been performing IVF since March of 1984, and has treated between 500 - 600 patients using IVF in that time.

IVF treatment is expensive. Couples can expect to pay $4200 plus the cost of the necessary drugs for each try with IVF. The drugs used for these procedures can cost an additional $1000 per try.(Note: the cost of most of these drugs is covered by Alberta Health Care).

At many clinics, patients must demonstrate their need for IVF treatment in the following ways:

-must have blocked tubes (inoperable, or failed operation to correct blockage)
-Couples with "unexplained" infertility (accounts for fifteen percent of all cases of infertility)

-Male factor problems (sperm count, etc.)

-Endometriosis

If patients possess one or more of these characteristics, they may be considered for treatment. The next step is for the doctor to determine the stability of the couples relationship; to receive IVF treatment, couples must have been married or living common-law for a minimum of three years. As well, they must be heterosexual and assumed psychologically stable.

The Calgary Clinic treats only couples of long duration unexplained fertility. Couples under the age of 35 must have been trying to get pregnant for five years or more; couples over the age of 35 for three years or more. According to Dr. Pattinson this is because the incidence of pregnancy in couples with unexplained infertility is relatively high, and it is only after a fairly long period of infertility that the success rate with IVF is better than their chances of spontaneous pregnancy.

Dr. Pattinson indicates that in 1987, the rate of success for embryo transfer was approximately 24 percent. The percentage of actual births resulting from IVF is lower, approximately 15 percent. When asked about this apparently low rate of success, Dr. Pattinson noted it is not really low when compared to pregnancy attempts by fertile couples. He cites the success rates of such endeavours to be between 20-25 percent per cycle.

However, it must be noted that the majority (85 percent) of patients do go home without the child they so desperately want. Each try is invasive, painful and costly. If patients are not impregnated on their first try, how many more attempts can they afford to make? Emotionally, the price of continued attempts and successive failures may be too high.

Dr. Pattinson says that all of his patients are fully informed of their chances of conception. He is concerned about the psychological impact of the treatment particularly if it fails but says there is a counsellor available to patients at the clinic and both he and his staff provide counselling support as well.

Dr. Pattinson believes strongly that IVF should be covered under health care. Other similar treatments for infertility, ie Tubal Surgery, are covered even though they may have low success rates.(20 percent for TS).

He feels further funding and/or coverage would provide lower and middle income families with access to IVF as an option for treatment.

IVF, he says, "is a worthwhile procedure and it could, potentially, benefit a lot of couples. In our office we have

photographs of 50 babies produced as a result of IVF treatment. These babies are not experimental, they are real. No one would question the value of the treatment if they saw the faces of the patients who have been successful."

Confronted with the accusation that the medical profession does not address the cause and treatment of infertility as much as it creates alternate methods of reproduction, Dr. Pattinson replied, "That may be true. But heart transplants do not treat the cause either."

While Dr. Pattinson does not want to see legislation regarding NRTs he does believe that guidelines should be created within the medical profession. According to Dr.Pattinson, the Society of Obstetricians and Gynecologists is currently looking into the matter.

Dr. Cumming stresses the need for a stronger psychological approach to the treatment of patients, especially those undergoing IVF. He believes that preparing patients for failure is extremely important. "They often suffer a bereavement process and are not adequately prepared to deal with it." He thinks that counselling during the treatment would also be beneficial. In regards to the overall ethical question, Dr. Cumming said, "I have no ethical problem with helping people to achieve a pregnancy."

b. University of Alberta Hospital - Edmonton

The Edmonton clinic, like its counterpart in Calgary, receives no operating funding from the Provincial Government. It's staff is provided by the University Hospital. It's only source of revenue is the fees charged to patients seeking artificial insemination treatment. The clinic attempts to keep these fees as low as possible in an effort to allow all income groups the opportunity to receive treatment. Staff at the clinic state, "The clinic is not here to make money, but to help the patients."

Artificial Insemination

Therapeutic donor insemination (TDI) accounts for eighty percent of all AI procedures performed at the Edmonton clinic. This procedure has been performed at the U of A Hospital for the past twenty years. At present, there is a one year waiting list for those who wish to undergo the treatment. Dr. Cumming believes that there is a correlation between the increasing number of AI patients and the increased waiting period faced by couples seeking adoption as an alternative to treatment.

TDI patients in Edmonton can expect to pay approximately $50 per insemination. These fees cover the costs incurred in the

collection and storage of donor sperm. While AI is considerably less expensive than other procedures, there is concern regarding the financial obstacles that lower socio-economic groups may encounter if the clinic is forced to raise its fees.

In order to offset fears about AIDS, the Edmonton Clinic has implemented the process of screening donor sperm for the presence of AIDS and hepatitis. Sperm donors provide samples at regular intervals. Six months after the final donation, the donor is again screened for the virus and if cleared, his samples are frozen for future use.

Medical students and staff comprise the majority of sperm donors in Alberta hospitals. They are paid a small amount which is drawn from the funds received from AI patients. As candidates they are available for screening, and any genetic testing which may be required. In light of the screening process that is imposed on donors, fertility specialists indicate that the possibility of transferring genetic disorders through anonymous donors is virtually nonexistent.

The Edmonton clinic performs a variety of diagnostic tests to determine individual causes and incidence of infertility (refer to the Foothills Hospital overview for a complete listing of tests that are performed in Edmonton).

Eligibility for treatment is an important ethical and legal consideration. The infertile couple must demonstrate that they are in a stable, heterosexual relationship which has gone on for three or more years,prior to being selected for treatment. No psychological testing is conducted, however, it is left to the discretion of the physician to decide whether the couple is emotionally fit to receive the treatment. Further, the couple must desire the treatment for medical reasons, rather than for what Dr. Cumming refers to as sociological reasons (those not related to a biological impairment to conception).

The legality of some of these prerequisites for treatment is already being questioned. A number of groups - most notably gay right's advocates - are beginning to challenge the use of such criteria for AI and other treatments. Furthermore, many of these treatments are extremely expensive, and create financial barriers for lower income patients. Does this mean then that only wealthy married or common law heterosexuals should be able to access these treatments in Alberta?

Access to IVF is a concern. It is expensive and, of course, there is only one clinic to serve all Albertans. Dr. Scott, of the University of Alberta, believes that the government should provide funding to establish an IVF clinic in Edmonton because."There are enough interested people in Alberta to warrant it." The government, citing the fact that there is only

a six months waiting list for the procedure in Calgary, has turned down all requests for funding to date. Dr. Scott and others believe that if Alberta Health Care covered or offset the procedure the waiting list would be substantially longer.

7. ALTERNATIVES TO TREATMENT

For infertile couples who do not wish to undergo treatment, or for those who have met with no success, there are limited alternatives to choose from. Outside of trying to adopt a child, becoming involved with child care or opening their homes to foster children, they must resign themselves to facing a life without children.

Infertility patients have indicated to Council research staff that they tend to prefer private adoptions because of the increased contact between the birth mother and the adoptive couple. They are more comfortable with this set-up than with the formal and somewhat austere proceedings of ward, or public adoption. They cite the need to know more information about their child's biological parent(s) than is released through public adoption services. As well, it is argued that it is "healthier" for both the birth mother and for the adoptive family to communicate and discuss their feelings about the adoption.

Adoption Services of Alberta Social Services indicate that the 1200 adoptive parents on their waiting list can expect to wait five years for a "preferred child." In Alberta, preferred children are healthy, caucasian infants (under one year). Couples who were approved by Adoptions Services in 1983 are only now beginning to receive children.

This situation is largely due to the drastic decrease in the number of infants placed for adoption between 1980 and 1987. Adoption Services statistics indicate that in 1980, 660 "preferred" children were placed. By 1987, this number had dropped to seventy-one. The Program Supervisor of Adoption Services maintains that this situation is not altogether bleak. She says, "The good news is that special needs children are now being placed at a higher rate." Ms. Scully notes that in 1987, 280 of these children were adopted through Adoption Services. "Special needs" children are those identified as mentally or physically handicapped. Visible minorities may also be included in this group.

"...In the interests of all parties concerned...", Adoption Services maintains a policy of closed adoption. In these cases, no information regarding the adoptive parents or the birth mother is disclosed. In 1987, however, a pilot project was implemented wherein birth mothers were provided with information

files on three adoptive families and were then allowed to select one from these three. The project has not been evaluated as yet, and only took place in Edmonton.

8. LEGAL IMPLICATIONS

Unprecedented developments in human reproduction have forced the legal profession, and society as a whole to consider numerous quandaries stemming from the use of these procedures. The social, legal and medical implications of new reproductive technologies are often inter-related. What may be considered a legal question is often a medical issue as well.

The medical community is for the most part "self governing" in deciding how it will approach the use of the new technologies, how it will conduct research, and how far it can push the existent barriers. Although the issues facing them are numerous and important, no outside intervention (from the government or the Justice system) is aiding in the decision-making process.

The Advisory Council on Women's Issues is concerned with the lag in the development of legislation on NRTs. Technology is advancing too rapidly to allow for comprehensive legislation to be developed. If legislative action is not taken soon, the technologies may move beyond the reach of any legislation in the future. While no cases relating directly to NRTs have come

before the courts in Alberta, it is only a matter of time before a number of legal questions must be addressed in our Province.

The imminence of these legal dilemmas has prompted the Alberta Bar Association, The Institute of Law Research and Reform, and other concerned groups involved in the development of legislation to draw attention to these issues in recent months. The Alberta Bar Association has called for a joint study into NRTs with the participation of the Alberta Medical Association. According to members of the Bar Association, the AMA has yet to respond to the request.

Other steps that are being taken include a presentation to the Premier's Health Commission on Future Health Care for Albertans this fall by the Health Law Subsection of the Bar in Calgary. Among the topics they plan to address are the legal issues surrounding surrogacy and the legal implications of assisted reproductive technologies. Among the Bar members active in this project is Suzanne Palmer, who practices in Edmonton. She feels that, "It is vital that these areas be explored." And further, that, these procedures will have profound implications to present and future society."

Alberta currently has no legislation relating to reproductive technologies. This is common throughout most of Canada, and what little legislation there exists is found in Articles 586 and 588

of the Quebec Civil Code, and in the Yukon's Children's Act of 1984. Both deal with the legitimacy of children conceived through AID if the husband consented to the procedure.
Women's groups see an urgent need to fill this void with appropriate legislation. Medical professionals insist it is a health care matter and should be subject only to medical guidelines.

To this end, the Alberta Advisory Council on Women's Issues has joined in the call for a Royal Commission to study the implications of new reproductive technologies. As stated by Dr. Margit Eichler of the Canadian Coalition for a Royal Commission on New Reproductive Technologies,"it is imperative that we begin to explore the social issues surrounding these new technologies and initiate a public debate over what limits we want to put on them."

9. ETHICAL CONSIDERATIONS

The ethical implications of new reproductive technologies will perhaps have the greatest impact on society. How far society allows the technology to develop, who the key decision makers are and will be, and the formulation of policies and legislation governing the procedures will have an enormous impact on future generations.

The subject of NRTs is a relatively new one. As with all new technologies we must tread carefully. No one wishes to deny scientists their right to examine the causes, treatments and potential cures for infertility, but we must understand clearly the ramifications of their discoveries. Some technologies are to be embraced , others must be rejected or restricted.

Regulatory controls, jointly established by medical and legal experts in consultation with concerned women's groups, seem to be the most appropriate response to this dilemna.

No one wishes to deny any man or woman the right to experience the joys of parenthood. We must ensure that their right to have a chance at conception is balanced with societal rights and protections.

Democracy is founded on the principle that minority rights must be upheld and given the same value as the rights of the majority. In this situation we have more than one minority to protect; we must protect the infertile couples and the women who could potentially be exploited.

The primary concern must be that of human rights, those of the parents and those of the children they produce. Reproduction, in and of itself, can never supercede the rights of any individual.

ALBERTA ADVISORY COUNCIL ON WOMEN'S ISSUES

MINI-DICTIONARY ON

NEW REPRODUCTIVE TECHNOLOGIES

MINI-DICTIONARY

AMNIOCENTISIS

This is a prenatal diagnostic technique that may be used to detect the gender of the fetus and chromosomal abnormalities (mainly Down's Syndrome). A needle is inserted into the abdomen of the pregnant woman, and a sample of the amniotic fluid is extracted. This technique is frequently practised on women over the age of 35 as risk of chromosomal abnormality increases as the mother ages. One drawback of amniocentesis is that it cannot be performed until the second trimester of pregnancy.

ARTIFICIAL INSEMINATION

This technique is now referred to as "therapeutic insemination by donor", or TDI, by fertility specialists in Alberta. Most literature still refers to the procedure as AI, so for simplicity, this discussion will as well. Donors may be husbands (AIH), or anonymous (AID) Sperm is deposited into a woman's uterus to promote conception. AID is the most commonly practised form of AI in Alberta (comprising 80% of all AI).

CHORIONIC VILLI SAMPLING (CVS)

CVS is another prenatal diagnostic procedure used to detect any chromosomal abnormalities. Cells of fetal origin are removed from the woman's uterus for analysis. While still considered largely experimental, CVS may be performed in the first trimester of pregnancy. If perfected, this procedure could provide an alternative to the four month waiting period for amniocentesis.

CLONING

Cloning is a form of asexual reproduction which produces a genetic "carbon copy" of the original organism. This process occurs in some plant and animal species, but has not yet been successfully applied to human reproduction.

ECTOGENISIS

This process refers to the possibility of bringing a human fetus to term by using life support systems or what could be considered "artificial wombs". Ectogenisis literally means 'produced outside', in this case, produced outside of a human womb.

EMBRYO TRANSFER

A fertilized egg from one woman is surgically removed and placed in a second woman's uterus. Embryo replacement is a related technique and involves the re-implantation of a woman's own fertilized egg into her womb during in vitro fertilization.

IN VITRO FERTILIZATION

More commonly known for producing 'test-tube babies', this procedure involves the extraction of human ova from a woman's body which are then fertilized in a laboratory petri dish. The fertilized ova are generally re-implanted into the same woman's uterus. It is common practice for physicians to fertilize more eggs than will be used in the procedure. These additional eggs could be implanted into another woman, used for research, discarded, or (when technology allows) placed in an "artificial womb" for gestation.

PARTHENOGENSIS

Also known as "virgin birth", this is another type of asexual reproduction involving the duplication of the female egg without fertilization by sperm. It results in all-female offspring. The process has been achieved in laboratory experiments with some plant and animal species, but not with humans to date.

SEX SELECTION

Refers to attempts to control the sex of offspring prior to conception. The only effective method at this point involves "sperm splitting", a procedure where sperm bearing Y, or male chromosomes are are separated from those bearing X, or female chromosomes. Conception takes place with the AI of either X- or Y-rich sperm depending on the preferred gender.

SUPEROVULATION

Fertility drugs are administered to the female patient in an effort to promote ovulation. Often used in conjunction with embryo transfer and in vitro fertilization, this process stimulates the production of numerous eggs in order to ensure that an adequate number are available for fertilization during the procedure. Hormonal regimens most often include the use of Clomid in Alberta.

SURROGACY

Generally following the signing of a pre-conception contract between the contractual couple and the gestational mother, AI is performed on one woman using the sperm of the contractual "husband". The surrogate will generally agree to bear the couple's child for a predetermined amount of money. The use of

the term "surrogate" is a misnomer, in that the "surrogate" in these instances is the true biological mother of the child, rather than the care-giver.

ULTRASOUND

High frequency sound waves are used to produce an image of the fetus on a video screen. This procedure is widely used by obstetricians to examine fetal development, and it is particularly useful in monitoring high-risk pregnancies. Ultrasound has become so commonplace in the past decade that many pregnant women can expect to undergo an ultrasound even in the most routine of pregnancies.

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